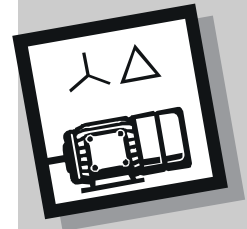


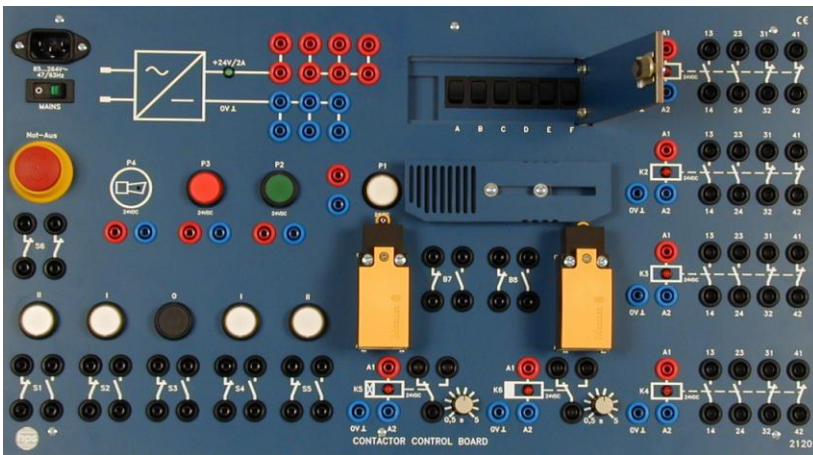
Contactor Control

Compact Training System from Conventional Control to the PLC

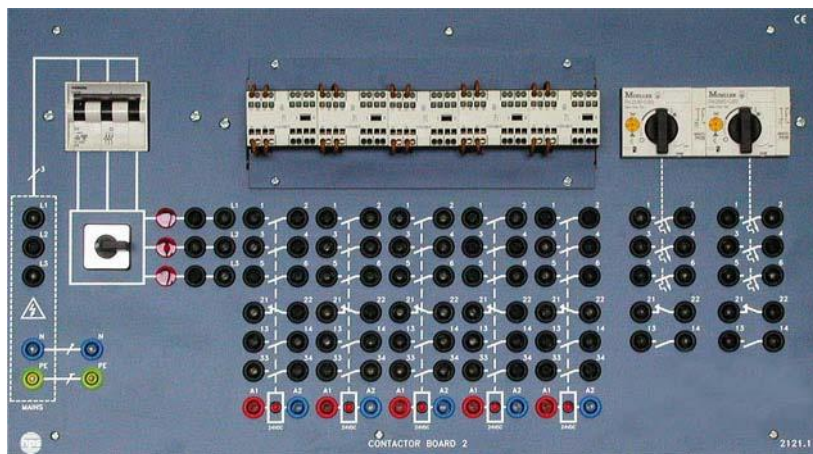


Contactor Control
Training System

Types
2120 / 2121.1 / 2122



CONTACTOR CONTROL
BOARD (Type 2120)

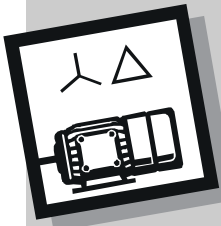


CONTACTOR BOARD (Type 2121.1)



AC MULTIFUNCTION MOTOR (Type 2122)

- All introductory experiments in contactor control engineering (24 V) can be conducted with the CONTACTOR CONTROL BOARD.
- With built-in process simulation
- Built-in error simulator also makes it excellently suitable for tests
- All power parts such as line circuit breakers, load disconnecting switches, main contactors and motor circuit breakers are available on the CONTACTOR BOARD
- Special contactors enable direct control by a programmable logic control (PLC)
- The AC MULTIFUNCTION MOTOR enables all tests with asynchronous motor, motor with isolated windings and Dahlander motor
- No special lab equipment required, 1-phase or 3-phase mains connection suffices



Contactor Control Training System

Types

2120 / 2121.1 / 2122

Contactor Control

Combination Possibilities of the Contactor Control Training System

Basic experiments in contactor control engineering with 24 V

CONTACTOR CONTROL BOARD
Type 2120

- Simple contactor circuits
- Contactor circuit with timer relay (delayed pick-up and drop-out)
- Use of emergency stop button according to VDE 0113 and VDE 0100
- Safety equipment according to the Machine Directive
- Contact labelling according to DIN

Experiments in contactor control engineering with application (motor)

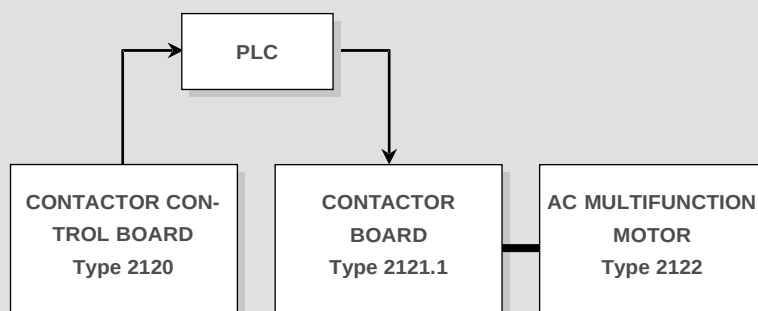
CONTACTOR CONTROL BOARD
Type 2120

CONTACTOR BOARD
Type 2121.1

AC MULTIFUNCTION MOTOR
Type 2122

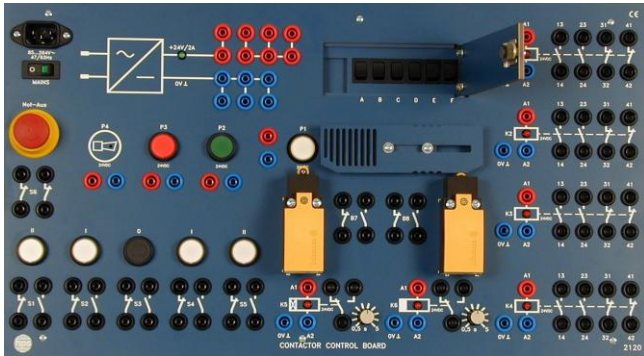
- Star-delta circuit
- Star-delta circuit with 2 directions of rotation
- Dahlander circuit
- Circuit for motor with isolated windings

Experiments in contactor control engineering with PLC and application (motor)



All the circuits listed above can also be set up in connection with a PLC.

Contactor Control



CONTACTOR CONTROL BOARD (Typ 2120)

You can conduct the most important basic experiments in contactor control engineering (24 V) with the CONTACTOR CONTROL BOARD. The built-in power supply enables direct use on a 1-phase mains.

Power supply

- Mains connection: 85 ... 264 V AC / 47 ... 63 Hz
- Output: 24 V DC, 2 A

4 auxiliary contactors

- Operating voltage: 24 V DC
- Status display by LED
- 2 NCC, 2 NOC each, contact load: 250 V AC, 8 A

2 timer relays (delayed pick-up and drop-out)

- Operating voltage: 24 V DC, status display by LED
- 1 changeover switch, contact load: 250 V AC, 8 A
- Time delay, adjustable: approx. 0.5 ... 5 s

Simulation of a safety cover

- 2 limit switches for sensing the end positions
- 1 NCC, 1 NOC each, contact load: 250 V AC, 4 A
- Optical indication of the position by a signal lamp: white, 24 V, 40 mA

5 Push-buttons

- 1 NCC, 1 NOC each, contact load: 250 V AC, 4 A

2 signal lamps, green, red: 24 V, 40 mA

Signal generator, acoustic: 24 V DC

Emergency stop switch

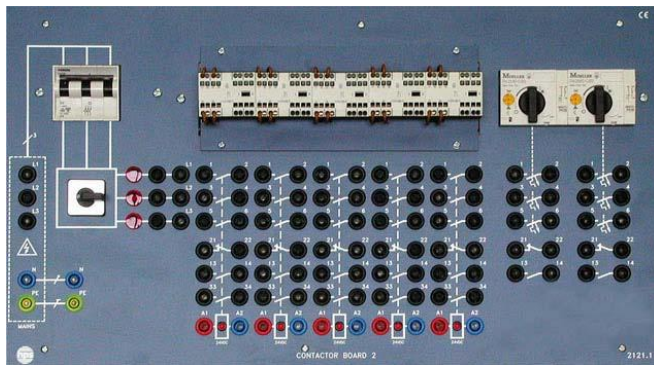
- 2 NCC, contact load: 250 V AC, 4 A

Error simulator with lockable doors

- Simulation of typical errors by rocker switch (A ... F), can be set individually and in combination

Dimensions / weight

- 532 x 297 x 130 mm (w x h x d) / weight: 3.6 kg



CONTACTOR BOARD (Type 2121.1)

The CONTACTOR BOARD is used for conducting experiments with main circuits in connection with the CONTACTOR CONTROL BOARD or a PLC.

The AC MULTIFUNCTION MOTOR (Type 2122) can be used as a load.

Power supply, 3-phase

- Mains connection: 400 V AC / 50 ... 60 Hz

5 main contactors with auxiliary contacts

- Operating voltage: 24 V DC / 2.3 W
Due to the low current consumption the main contactors can be controlled directly by a PLC.
- Status display by LED
- 3 NOC, contact load: 400 V AC, 7 A
- auxiliary contacts: 1 NCC, 2 NOC

2 motor circuit breakers

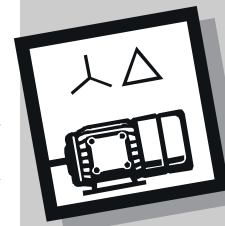
- Motor current: 0.4 ... 0.63 A, adjustable, with 2 additional auxiliary contacts (1 NCC, 1 NOC), other motor circuit breakers can also be installed if necessary.

Line circuit breaker: 3fold, 400 V AC, 2 A

Load disconnecting switch: 400 V AC, 25 A

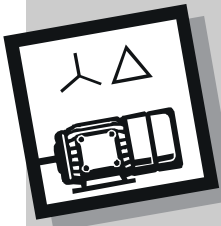
Dimensions / weight

- 532 x 297 x 125 mm (w x h x d) / weight: 5.3 kg



Contactor Control Technical Data

Types
2120 / 2121.1



Contactor Control Technical Data

**Type
2122**



AC MULTIFUNCTION MOTOR (Type 2122)

In contactor control engineering the AC MULTIFUNCTION MOTOR can be used in three different operating modes:

- As an asynchronous motor in star and delta operation with left and right hand rotation
- As a motor with isolated windings for two speeds, with left and right hand rotation
- As a Dahlander motor for delta or double star operation, with left and right hand rotation

To easily recognise both direction of rotation and high and low speeds, a display has been installed which is fed by a tachogenerator.

Delta circuit

- Voltage / current: 400 V AC / 0.45 A
- Power: 0.1 kW
- Speed: 1350 rpm (at 50 Hz)
- $\cos \varphi$: 0.71

Double star circuit

- Voltage / current: 400 V AC / 0.5 A
- Power: 0.15 kW
- Speed: 2710 rpm (at 50 Hz)
- $\cos \varphi$: 0.8

Dimensions / weight

- 532 x 297 x 270 mm (w x h x d)
- weight: 5.5 kg